



WFDC5 siRNA (h): sc-76922

BACKGROUND

Peptidases are enzymes that are responsible for hydrolyzing peptide bonds of polypeptide chains during protein catabolism. Protease inhibitors are important peptidase regulators which halt enzymatic function. Serpins, the largest family of inhibitors, act through irreversible covalent linkage to the target peptidase, thereby competitively blocking the active site. WFDC5 (WAP four-disulfide core domain protein 5), also known as PRG5 or WAP1, is a secreted serpin inhibitor. WFDC5 contains two WAP motifs and is induced by p53/TP53. Two isoforms of WFDC5, at 224 and 123 amino acids in length, are encoded by a gene on human chromosome 20. WFDC5 is highly expressed in trachea, tongue and salivary glands. Comprising approximately 2% of the human genome, chromosome 20 contains nearly 63 million bases that encode over 600 genes, some of which are associated with Creutzfeldt-Jakob disease, amyotrophic lateral sclerosis, spinal muscular atrophy, RING chromosome 20 epilepsy syndrome and Alagille syndrome.

REFERENCES

1. Lundwall, A. and Clauss, A. 2002. Identification of a novel protease inhibitor gene that is highly expressed in the prostate. *Biochem. Biophys. Res. Commun.* 290: 452-456.
2. Clauss, A., Lilja, H. and Lundwall, A. 2002. A locus on human chromosome 20 contains several genes expressing protease inhibitor domains with homology to whey acidic protein. *Biochem. J.* 368: 233-242.
3. Ville, D., Kaminska, A., Bahi-Buisson, N., Biraben, A., Plouin, P., Telvi, L., Dulac, O. and Chiron, C. 2006. Early pattern of epilepsy in the RING chromosome 20 syndrome. *Epilepsia* 47: 543-549.
4. Joó, J.G., Beke, A., Tóth-Pál, E., Hargitai, B., Szigeti, Z., Papp, C. and Papp, Z. 2006. Trisomy 20 mosaicism and nonmosaic trisomy 20: a report of 2 cases. *J. Reprod. Med.* 51: 209-212.
5. Kazantsev, A.G. 2007. Cellular pathways leading to neuronal dysfunction and degeneration. *Drug News Perspect.* 20: 501-509.
6. Elghezal, H., Hannachi, H., Mougou, S., Kammoun, H., Triki, C. and Saad, A. 2007. RING chromosome 20 syndrome without deletions of the subtelomeric and CHRNA4—KCNQ2 genes loci. *Eur. J. Med. Genet.* 50: 441-445.
7. Idoji, Y., Watanabe, Y., Yamashita, A., Yamanishi, K., Nishiguchi, S., Shimada, K., Yasunaga, T. and Yamanishi, H. 2008. In silico study of whey-acidic-protein domain containing oral protease inhibitors. *Int. J. Mol. Med.* 21: 461-468.

CHROMOSOMAL LOCATION

Genetic locus: WFDC5 (human) mapping to 20q13.12.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

WFDC5 siRNA (h) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WFDC5 shRNA Plasmid (h): sc-76922-SH and WFDC5 shRNA (h) Lentiviral Particles: sc-76922-V as alternate gene silencing products.

For independent verification of WFDC5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76922A and sc-76922B.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

WFDC5 siRNA (h) is recommended for the inhibition of WFDC5 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor WFDC5 gene expression knockdown using RT-PCR Primer: WFDC5 (h)-PR: sc-76922-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.